



# Oregon

John A. Kitzhaber, M.D., Governor

## Department of Environmental Quality

Northwest Region  
2020 SW Fourth Avenue  
Suite 400  
Portland, OR 97201-4987  
(503) 229-5263 Voice  
TTY (503) 229-5471

ENF/COMPL \_\_\_\_\_  
TV ACTIVITY \_\_\_\_\_  
MACT \_\_\_\_\_  
OTHER \_\_\_\_\_

EPA REGION X  
RINDY RAMOS  
MAIL STOP OAQ-107  
1200 SIXTH AVENUE  
SEATTLE, WASHINGTON 98101

RE: ISSUED AIR CONTAMINANT DISCHARGE PERMIT  
COMPANY NAME S & PERMIT NUMBERS:  
**COLUMBIA STEEL CASTING**.....26-1869

Dear Ms. Ramos:

Enclosed please find the ACD Permit, as issued, for the following facility:

Columbia Steel Casting Company  
Permit # 26-1869

If you have questions relating to the issuance of this permit, please contact me at (503) 229-5582.

Sincerely,

*Catherine Blaine*

Catherine Blaine  
Air Quality Permit Coordinator  
Northwest Region

Enclosure





**STANDARD**  
**AIR CONTAMINANT DISCHARGE PERMIT**

Department of Environmental Quality  
Northwest Region  
2020 SW 4th Avenue, #400  
Portland, Oregon 97201  
(503) 229-5554



This permit is being issued in accordance with the provisions of ORS 468A.040 and  
based on the land use compatibility findings included in the permit record.

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**ISSUED TO:**

Columbia Steel Casting Company, Inc.  
P.O. Box 83095  
Portland, OR 97283

**INFORMATION RELIED UPON:**

Application No.: 017842  
Date Received: 12-13-99

**PLANT SITE LOCATION:**

10425 N. Bloss Avenue  
Portland, OR 97283

**LAND USE COMPATIBILITY FINDING:**

Approving Authority: City of Portland  
Approval Date: 12/01/1994

**ISSUED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY**

*Nancy Cardwell for:*  
Ed Druback, Northwest Region Air Quality Manager

**SEP 24 2002**  
Dated

Source(s) Permitted to Discharge Air Contaminants (OAR 340-216-0020):

Table 1 Code	Source Description	SIC
Part B, 36.	Gray iron and steel foundries, malleable iron foundries, steel investment foundries, steel foundries (not elsewhere identified)	3321





## TABLE OF CONTENTS

1.0	GENERAL EMISSION STANDARDS AND LIMITS .....	3
2.0	PLANT SITE EMISSION LIMITS .....	4
3.0	OPERATING AND MAINTENANCE CONDITIONS.....	4
4.0	COMPLIANCE DEMONSTRATION .....	5
5.0	RECORDKEEPING REQUIREMENTS.....	7
6.0	REPORTING REQUIREMENTS .....	8
7.0	ADMINISTRATIVE REQUIREMENTS.....	11
8.0	FEEs.....	11
9.0	GENERAL CONDITIONS AND DISCLAIMERS .....	12
10.0	EMISSION FACTORS .....	14
11.0	PROCESS/PRODUCTION RECORDS .....	16
12.0	ABBREVIATIONS, ACRONYMS, AND DEFINITIONS .....	17



## **1.0 GENERAL EMISSION STANDARDS AND LIMITS**

- 1.1. Visible Emissions** The permittee must comply with the following visible emission limits, as applicable:
- Emissions from any source other than fuel burning equipment must not exceed an opacity equal to or greater than 20% for a period aggregating more than 30 seconds in any one hour.
- 1.2. Particulate Matter Emissions** The permittee must comply with the following particulate matter emission limits, as applicable:
- a. Particulate matter emissions from any fuel burning equipment installed on or before June 1, 1970 must not exceed 0.2 grains per standard cubic foot, corrected to 12% CO<sub>2</sub> or 50% excess air.
  - b. Particulate matter emissions from any fuel burning equipment installed, constructed, or modified after June 1, 1970 must not exceed 0.1 grains per standard cubic foot, corrected to 12% CO<sub>2</sub> or 50% excess air.
  - c. Particulate matter emissions from any air contaminant source installed on or before June 1, 1970 other than fuel burning equipment and fugitive emission sources must not exceed 0.2 grains per standard cubic foot.
  - d. Particulate matter emissions from any air contaminant source installed, constructed, or modified after June 1, 1970 other than fuel burning equipment and fugitive emission sources must not exceed 0.1 grains per standard cubic foot.
- 1.3. Fugitive Emissions** The permittee must take reasonable precautions to prevent fugitive dust emissions by:
- a. Treating vehicular traffic areas of the plant site under the control of the permittee.
  - b. Operating all air contaminant-generating processes so that fugitive type dust associated with the operation will be adequately controlled at all times.
  - c. Storing collected materials from air pollution control equipment in a covered container or other method equally effective in preventing the material from becoming airborne during storage and transfer.



- 1.4. Particulate Matter Fallout** The permittee must not cause or permit the emission of any particulate matter larger than 250 microns in size at sufficient duration or quantity, as to create an observable deposition upon the real property of another person. The Department will verify that the deposition exists and will notify the permittee that the deposition must be controlled.
- 1.5. Nuisance and Odors** The permittee must not cause or allow air contaminants from any source to cause a nuisance. Nuisance conditions will be verified by Department personnel.
- 1.6. Fuels** The permittee must not use any fuel other than natural gas, propane, butane, or No. 2 fuel oil (diesel). Fuel oil must not contain more than 0.5% sulfur by weight for ASTM No. 2 distillate oil.

## 2.0 PLANT SITE EMISSION LIMITS

**2.1. Plant Site Emission Limits (PSEL)**

Plant site emissions must not exceed the following:

Pollutant	Limit	Units
PM	42	tons per year
PM <sub>10</sub>	28	tons per year
NO <sub>x</sub>	39	tons per year
CO	99	tons per year
VOC	72	tons per year
Single HAP	9	tons per year
Combined HAPs	24	tons per year

- 2.2. Annual Period** The annual plant site emissions limits apply to any 12-consecutive calendar month period.

## 3.0 OPERATING AND MAINTENANCE CONDITIONS

- 3.1. Work practices** The following work practices are required to reduce emissions from the arc furnaces:
- The permittee shall not conduct any oxygen lancing on the North 10TT electric arc furnace except when utilizing additional control equipment with prior written approval of the Department.





- b. The permittee may oxygen lance only on the No. 1 South 6MT or No. 2 South 10TT electric arc furnaces at the rate of 22.4 cfm for a time not to exceed ten (10) minutes for each heat.
- c. The permittee shall not backcharge in any electric arc furnace.
- d. The permittee shall, during tapping of either No. 1 or No. 2 South electric arc furnaces shut the melting power off on both furnaces and divert all collection capacity (58,000 cfm) to the furnace collection hood.

## **4.0 COMPLIANCE DEMONSTRATION**

### **4.1. Testing Requirements**

- a. By no later than 18 months after issuance of this permit, the permittee must establish the fugitive emission levels for particulate and PM<sub>10</sub> for the two induction furnace buildings #8 and #9 while operating the induction furnace process lines inside at their maximum operating capacity, by conducting a source test for particulate and PM<sub>10</sub> emissions. The test methods and procedures proposed will be submitted to the Department for approval at least 15 days in advance of testing.
- b. By no later than 36 months after issuance of this permit, the permittee must demonstrate the two steel carbon arc furnaces are capable of operating at their maximum operating capacity in compliance with the emission factors in Condition 10 by conducting a source test for particulate, PM<sub>10</sub> and CO emissions. The test methods and procedures proposed will be submitted to the Department for approval at least 15 days in advance of testing.
- c. For particulate matter and PM<sub>10</sub>,
  - (1) Measure total particulate matter PM according to Oregon Method 5 or EPA Method 5 for the front-half of the sampling train and EPA Method 202 for the back-half.
  - (2) Measure PM<sub>10</sub> according to EPA Method 201 or EPA Method 201A for the front-half particulate matter. Measure back-half, or condensable, particulate matter with the PM<sub>10</sub> sampling train according to the same method used for total particulate matter. The sample-volume requirements of the Department's Source Sampling Manual for Method 5 apply to Methods 201 and 201A as well.





- (3) The minimum sample-mass requirements in Method 5I apply separately to the front and back half samples instead of the Manual's sample-volume requirements. If performing Oregon Method 5, adopt all procedures and quality assurance in Method 5I, applying the requirements for acetone to the other solvents, water and methylene chloride. For emission-factor verification, the minimum sample mass requirement applies at the level of the permit's current, applicable emission factor for reporting emissions instead of half the emission limit.
- (4) Measure other emissions as the Oregon Source Sampling Manual directs. Add quality assurance from EPA Method 6C to EPA Method 10.
- (5) The following parameters must be monitored and recorded during the arc furnace source test:
  - i. visible emissions as measured by EPA Method 9 for a period of at least six minutes during or within 30 minutes before or after each test run;
  - ii. process operating parameters; including weight of metal charged, type and characteristics of metal charge preparation such as degreasing procedure.
  - iii. pollution control device operating parameters; including pressure drop across the baghouse, and records of bag replacement and maintenance.
- d. All tests must be conducted in accordance with the Department's Source Sampling Manual and the approved pretest plan. The pretest plan must be submitted at least 15 days in advance and approved by the Regional Source Test Coordinator. Test data and results must be submitted for review to the Regional Source Test Coordinator within 30 days unless otherwise approved in the pretest plan.
- e. Only regular operating staff may adjust the combustion system or production processes and emission control parameters during the source test and within two hours prior to the source test. Any operating adjustments made during the source test, which are a result of consultation with source testing personnel, equipment vendors or consultants, may render the source test invalid.

**4.2. Monitoring Requirements**

The permittee must monitor the operation and maintenance of the plant and associated air contaminant control devices as follows:



Baghouses must be inspected regularly and bags replaced according to manufacturer's recommendations or industry standards.

**4.3. PSEL Compliance Monitoring**

Compliance with the PSEL is determined for each 12-consecutive calendar month period based on the following calculation for each pollutant:

$$E = \Sigma(EF \times P)/2000 \text{ lbs}$$

where,

- E = pollutant emissions (ton/yr);  
EF = pollutant emission factor (see condition 10.0);  
P = process production (see Condition 11.)

**4.4. Emission Factors**

The permittee must use the default emission factors provided in condition 10.0 for calculating pollutant emissions, unless alternative emission factors are approved by the Department. The permittee may request or the Department may require using alternative emission factors provided they are based on actual test data or other documentation (e.g., AP-42 compilation of emission factors) that has been reviewed and approved by the Department.

## **5.0 RECORDKEEPING REQUIREMENTS**

**5.1. Operation and Maintenance**

The permittee must maintain the following records related to the operation and maintenance of the plant and associated air contaminant control devices:

- a. The records to be maintained are listed in Condition 11.
- b. Calculations of all of the monthly PSEL compliance monitoring records shall be retained for inspection by the Department.
- c. The records required in Condition 11 are to be maintained for a minimum of one year, and the results of this monitoring and any other data collected may be used to establish simpler compliance calculations such as using surrogates or averaged factors. Alternative monitoring and compliance methods and emission factors may be submitted to the Department for approval, without requiring a permit modification, for the following processes:



- i. Burning, arcing, welding and grinding operations.
- ii. Shot-blasting, Rotoblasting and abrasive cleaning operations.
- iii. The pattern shop rotoclone.
- d. Emissions from the induction buildings (#8 and #9) pouring, cooling and shakeout processes do not have emission factors established, but production records should be kept for future compliance calculations.

**5.2. Excess Emissions** The permittee must maintain records of excess emissions as defined in OAR 340-214-0300 through 340-214-0340 (recorded on occurrence). Typically, excess emissions are caused by process upsets, startups, shutdowns, or scheduled maintenance. In many cases, excess emissions are evident when visible emissions are greater than 20% opacity for 3 minutes or more in any 60-minute period.

**5.3. Complaint Log** The permittee must maintain a log of all written complaints and complaints received via telephone that specifically refer to air pollution concerns associated to the permitted facility. The log must include a record of the permittee's actions to investigate the validity of each complaint and a record of actions taken for complaint resolution.

**5.4. Retention of Records** Unless otherwise specified, all records must be maintained on site for a period of five (5) years and made available to the Department upon request.

## **6.0 REPORTING REQUIREMENTS**

**6.1. Excess Emissions** The permittee must notify the Department by telephone or in person of any excess emissions which are of a nature that could endanger public health.

- a. Such notice must be provided as soon as possible, but never more than one hour after becoming aware of the problem. Notice must be made to the regional office identified in Condition 7.3.
- b. If the excess emissions occur during non-business hours, the permittee must notify the Department by calling the Oregon Emergency Response System (OERS). The current number is 1-800-452-0311.





- c. The permittee must also submit follow-up reports when required by the Department.

## 6.2. Annual Report

The permittee must submit to the Department by **February 15** of each year this permit is in effect two (2) copies of the following information for the previous calendar year:

- a. Operating parameters:
  - i. All steel and metal melted annually in all furnaces as listed in Condition 11., in tons.
  - ii. Annual sand throughput for the plant, for each mold and core-making line, and each sand reclamation line, as listed in Condition 11., in tons.
  - iii. Pattern production, in 1000s of patterns, as required in Condition 5.1(c).
  - iv. Throughput on each burn arc station, welding or grinding stations in tons steel of castings, as required in Condition 5.1(c).
  - v. Throughput of shot-blast, Rotoblast and abrasive cleaning stations, as required in Condition 5.1(c).
  - vi. Usage of paint and mold & core wash, in gallons.
  - vii. Natural gas consumption, in millions of cubic feet (MMcf) and therms.
  - viii. Calendar year annual total of VOC emissions and VOC mass balance calculations.
  - ix. Monthly calculations of the 12-consecutive month compliance calculations for PM, PM<sub>10</sub>, CO and VOC, per Condition 4.3. If data is not available for the twelve months proceeding the issue date of this permit, monthly calculations may be reported until 12-consecutive months data is available.
- b. Records of all planned and unplanned excess emissions events.
- c. Summary of complaints relating to air quality received by permittee during the year.
- d. List permanent changes made in plant process, production levels, and pollution control equipment which affected air contaminant emissions.
- e. List major maintenance performed on pollution control equipment.





- 6.3. Relocation Notice** The permittee must not install or operate the facility or any portion of the facility at any new site without first providing written notice to the Permit Coordinator in the appropriate regional office. The written notice must include the date of the proposed move, approximate dates of operation, a detailed map showing access to the new site, and a description of the air pollution controls and procedures to be installed, operated, and practiced at the new site. Additional permits may be required if the permittee operates individual components of the facility at more than one site at a time.
- 6.4. Notice of Change of Ownership or Company Name** The permittee must notify the Department in writing using a Departmental "Permit Application Form" within 60 days after the following:
- a. Legal change of the name of the company as registered with the Corporations Division of the State of Oregon; or
  - b. Sale or exchange of the activity or facility.
- 6.5. Construction or Modification Notices** The permittee must notify the Department in writing using a Departmental "Notice of Construction Form," or "Permit Application Form," and obtain approval in accordance with OAR 340-210-0205 through 340-210-0250 before:
- a. Constructing or installing any new source of air contaminant emissions, including air pollution control equipment;
  - b. Modifying or altering an existing source that may significantly affect the emission of air contaminants;
  - c. Making any physical change which increases emissions; or
  - d. Changing the method of operation, the process, or the fuel use, or increasing the normal hours of operation that result in increased emissions.
- 6.6. Where to Send Reports and Notices** The reports, with the permit number prominently displayed, must be sent to the Permit Coordinator for the region where the source is located as identified in Condition 7.3.



## 7.0 ADMINISTRATIVE REQUIREMENTS

- 7.1. **Permit Renewal Application** The completed application package for renewal of this permit is due on November 1, 2004. Two (2) copies of the application must be submitted to the DEQ Permit Coordinator listed in condition 7.3
- 7.2. **Permit Modifications** Application for a modification of this permit must be submitted not less than **60** days prior to the source modification. A special activity fee must be submitted with an application for the permit modification. The fees and two (2) copies of the application must be submitted to the Business Office of the Department.
- 7.3. **Permit Coordinator Addresses** All reports, notices, and applications should be directed to the Permit Coordinator for the area where the source is located. The Permit Coordinator addresses are as follows:  
Department of Environmental Quality  
Northwest Region  
2020 SW 4th Avenue, Suite 400  
Portland, OR 97201-4987  
Telephone: (503) 229-5582
- 7.4. **Department Contacts** Information about air quality permits and the Department's regulations may be obtained from the DEQ web page at [www.deq.state.or.us](http://www.deq.state.or.us). All inquiries about this permit should be directed to the regional office for the area where the source is located. The Department's regional offices are as follows:  
Department of Environmental Quality  
Portland Office  
2020 SW 4th Avenue, Suite 400  
Portland, OR 97201-4987  
Telephone: (503) 229-5554

## 8.0 FEES

- 8.1. **Annual Compliance Fee** The Annual Fee specified in OAR 340-216-0020, Table 2, Part 2 for a Standard ACDP is due on **December 1** of each year this permit is in effect. An invoice indicating the amount, as determined by Department regulations, will be mailed prior to the above date.
- 8.2. **Change of Ownership or Company Name** The non-technical permit modification fee specified in OAR 340-216-0020, Table 2, Part 3(a) is due with an application for changing the ownership or the name of the company.



- Fee**
- 8.3. Special Activity Fees** The special activity fees specified in OAR 340-216-0020, Table 2, Part 3 (b through i) are due with an application to modify the permit.
- 8.4. Where to Submit Fees** Fees must be submitted to:  
Department of Environmental Quality  
Business Office  
811 SW Sixth Avenue  
Portland, Oregon 97204-1390

## **9.0 GENERAL CONDITIONS AND DISCLAIMERS**

- 9.1. Permitted Activities** This permit allows the permittee to discharge air contaminants from processes and activities related to the air contaminant source(s) listed on the first page of this permit until this permit expires, is modified, or is revoked.
- 9.2. Other Regulations** In addition to the specific requirements listed in this permit, the permittee must comply with all other legal requirements enforceable by the Department.
- 9.3. Conflicting Conditions** In any instance in which there is an apparent conflict relative to conditions in this permit, the most stringent conditions apply.
- 9.4. Masking of Emissions** The permittee must not cause or permit the installation of any device or use any means designed to mask the emissions of an air contaminant that causes or is likely to cause detriment to health, safety, or welfare of any person or otherwise violate any other regulation or requirement.
- 9.5. Department Access** The permittee must allow the Department's representatives access to the plant site and pertinent records at all reasonable times for the purposes of performing inspections, surveys, collecting samples, obtaining data, reviewing and copying air contaminant emissions discharge records and conducting all necessary functions related to this permit in accordance with ORS 468-095.
- 9.6. Permit Availability** The permittee must have a copy of the permit available at the facility at all times.
- 9.7. Open Burning** The permittee may not conduct any open burning except as allowed by OAR 340 Division 264.
- 9.8. Asbestos** The permittee must comply with the asbestos abatement requirements in OAR 340, Division 248 for all activities





involving asbestos-containing materials, including, but not limited to, demolition, renovation, repair, construction, and maintenance.

**9.9. Property Rights**

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

**9.10. Termination,  
Revocation, or  
Modification**

The Department may modify or revoke this permit pursuant to OAR 340-216-0082 and 340-216-0084.





## 10.0 EMISSION FACTORS

### Particulate Matter and PM10

Emission Point	EF for PM	EF for PM10	EF Units	EF Reference
Melting – 2 steel Arc Furnaces	0.22	0.22	lb/ton steel melted	Stack Test
Melting – Manganese Arc Furnace	0.31	0.31	lb/ton steel melted	Stack Test
Melting – 3 Induction Furnaces	0.10	0.09	lb/ton steel melted	AP 42 Table 12.13-2
Main Sand System	0.038	0.038	lb/ton sand	Stack Test
Group 8 Sand System	0.002	0.002	lb/ton sand	Baghouse Dust Study
Core Room Sand System	0.027	0.027	lb/ton sand	Baghouse Dust Study
S. Foundry Sand System	0.01	0.01	lb/ton sand	Baghouse Dust Study
Main Foundry Shakeout	0.037	0.037	lb/ton sand	Baghouse Dust Study
Group 3/6 Shakeout	0.038	0.038	lb/ton sand	Baghouse Dust Study
National Sand Reclaimer	0.061	0.061	lb/ton sand	Baghouse Dust Study
Joslyn Burn Arc	0.027	0.027	lb/ton sand	Baghouse Dust Study
S. Foundry Burn Arc	0.001	0.001	lb/ton metal	Stack Test
Joslyn Rotoblast	0.08	0.08	lb/ton metal	Baghouse Dust Study
Main Foundry Rotoblast	.014	0.014	lb/ton metal	Baghouse Dust Study
Joslyn Tumbblast	0.02	0.02	lb/ton metal	Baghouse Dust Study
Combined Burn/Weld	.014	0.014	lb/ton metal	Stack Test
Joslyn Spinblast	0.14	0.14	lb/ton metal	Assume 99% control
Pattern Shop Rotoclone	0.15	0.15	per 1000 patterns	Assume 99% control
Group 9 No-Bake Sand	.029	0.029	lb/ton sand	Assume 99% control
New Pattern Shop Rotoclone	0.05	0.05	per 1000 patterns	Assume 99% control
Natural Gas Combustion	2.5	2.5	lb/MMcf	DEQ Emission Factors
Roof Vent Fugitives	1.3	0.80	lb/ton metal	Ambient Air Monitoring



### Nitrogen Oxides -NOx

Emission Point	EF for NOx	EF Units	EF Reference
Steel Arc Furnaces	0.32	lb/ton metal	Stack Tests
Manganese Arc Furnace	0.32	lb/ton metal	Stack Tests
Induction Furnaces	0	lb/ton metal	AP 42 Table 12.10-4
Natural Gas Combustion	100	100 lb/MMcf	DEQ

### Carbon Monoxide – CO

Emission Point	EF for CO	EF Units	EF Reference
Steel Arc Furnaces	2.77	lb/ton metal	Stack Tests
Manganese Arc Furnace	0.30	lb/ton metal	Stack Tests
Induction Furnaces	0	lb/ton metal	AP 42 Table 12.10-4
Pouring, Cooling & Shakeout	45,000 tpy steel	Mass balance	MSDS
Natural Gas Combustion	21	lb/MMcf	DEQ

### Volatile Organic Compounds - VOC

Emission Point	EF for VOC	EF Units	EF Reference
Steel Arc Furnaces	0.18	lb/ton steel	AP 42-Table 7.10-3
Manganese Arc Furnace	0.18	lb/ton steel	AP 42-Table 7.10-3
Induction Furnaces	0	lb/ton steel	AP 42 Table 12.10-4
Pouring, Cooling & Shakeout	Mass Balance	lb/ton steel	MSDS
Mold & Core Alcohol Wash	Mass Balance	lb/ton steel	DEQ, 50% destruction
Mold & Core Making	Mass Balance	lb/ton steel	MSDS
Casting Painting	Mass Balance	lb/ton steel	MSDS
Pattern Painting	Mass Balance	lb/ton steel	MSDS
Natural Gas Combustion	2.78	lb/MMcf	DEQ



## 11.0 PROCESS/PRODUCTION RECORDS

Emissions device or activity	Process or production parameter	Frequency
Metal Melting: two steel arc furnaces, one manganese arc furnace, and four induction furnaces.	tons steel	Monthly
Mold and Core Making: Main Foundry Mold system, Group 8 Mold system, Core Room Core system, South Foundry Mold system.	tons sand	Monthly
Sand Reclamation: Green sand reclamation, No-Bake sand reclamation.	tons sand	Monthly
Burning, arcing, welding and grinding operation throughput.	tons castings	Monthly for one year
Shot-blasting, Rotoblasting and abrasive cleaning operation throughputs	tons castings	Monthly for one year
Pattern Shop throughput	Number of patterns	Monthly for one year
Natural Gas Combustion	millions of cubic feet	Monthly
Paint & Coating usage	gallons	Monthly
Core Wash & Mold Wash	gallons	Monthly

NOTE: Separate records for each process line or unit must be kept in order to use the correct emission factors for compliance calculations. See Condition 5.1 also.





## 12.0 ABBREVIATIONS, ACRONYMS, AND DEFINITIONS

ACDP	Air Contaminant Discharge Permit	NSR	New Source Review
ASTM	American Society for Testing and Materials	O <sub>2</sub>	oxygen
AQMA	Air Quality Maintenance Area	OAR	Oregon Administrative Rules
calendar year	The 12-month period beginning January 1st and ending December 31st	ORS	Oregon Revised Statutes
CFR	Code of Federal Regulations	O&M	operation and maintenance
CO	carbon monoxide	Pb	lead
DEQ	Oregon Department of Environmental Quality	PCD	pollution control device
dscf	dry standard cubic foot	PM	particulate matter
EPA	US Environmental Protection Agency	PM <sub>10</sub>	particulate matter less than 10 microns in size
FCAA	Federal Clean Air Act	ppm	part per million
gal	gallon(s)	PSD	Prevention of Significant Deterioration
gr/dscf	grains per dry standard cubic foot	PSEL	Plant Site Emission Limit
HAP	Hazardous Air Pollutant as defined by OAR 340-244-0040	PTE	Potential to Emit
I&M	inspection and maintenance	RACT	Reasonably Available Control Technology
lb	pound(s)	scf	standard cubic foot
MMBtu	million British thermal units	SER	Significant Emission Rate
NA	not applicable	SIC	Standard Industrial Code
NESHAP	National Emissions Standards for Hazardous Air Pollutants	SIP	State Implementation Plan
NO <sub>x</sub>	nitrogen oxides	SO <sub>2</sub>	sulfur dioxide
NSPS	New Source Performance Standard	Special Control Area	as defined in OAR 340-204-0070
		VE	visible emissions
		VOC	volatile organic compound
		year	A period consisting of any 12-consecutive calendar months





Department of Environmental Quality  
 Northwest Region  
 Air Quality Program  
**STANDARD**  
**AIR CONTAMINANT DISCHARGE PERMIT**  
**REVIEW REPORT**

Columbia Steel Casting Company, Inc.  
 10425 N. Bloss Avenue  
 Portland, OR 97283  
 (503) 286-0685

Source Test	Compliance Schedule	Report				Excess		NSPS	NSR	PSD	NESHAP	Size	Public Notice
		A	S	Q	M	R	N						
N	N	Y				Y		N	N	N	N	Std	II

**TABLE OF CONTENTS**

PERMITTING.....	2
SOURCE DESCRIPTION .....	2
COMPLIANCE.....	5
OPERATION AND MAINTENANCE CONDITIONS.....	6
PSEL HISTORY .....	6
EMISSIONS.....	8
MAJOR SOURCE APPLICABILITY .....	10
ADDITIONAL REQUIREMENTS .....	10
SOURCE TESTING .....	11
PUBLIC NOTICE.....	12
LIST OF COMMON ABBREVIATIONS.....	13



## **PERMITTING**

### PERMITTING ACTION

1. The permit is a renewal for an existing Air Contaminant Discharge Permit which was issued on June 19, 1997 and was originally scheduled to expire on February 1, 2000.

### OTHER PERMITS

2. Other permits issued or required by the Department of Environmental Quality for this source include: Water Quality Permit Type G12COLS, expiring 12/21/2004. This facility is a Small Quantity Generator (SQG) of hazardous waste.

### ATTAINMENT STATUS

3. The source is located in a maintenance area for ozone and carbon monoxide, and is a moderate source of ozone precursors and carbon monoxide. The source is in an attainment area for all other pollutants, and is not a major source of particulates.
4. The source is located within 100 kilometers of the following Class I Air Quality Protection Areas: Mt. Hood Wilderness Area, Mt. Washington Wilderness Area, and Mt. Jefferson Wilderness Area, but emissions are less than the significant emissions rate.

## **SOURCE DESCRIPTION**

### OVERVIEW

5. The permittee operates an alloy steel casting plant at 10425 N. Bloss Avenue, Portland, Oregon, which produces medium to large size castings. The process includes metal melting, olivine green sand mold making and core making, metal pouring, casting shakeout and casting finishing. The main binders used are clay and water, and sodium silicate. The facility was built in 1962.
6. The following changes have been made to the facility since the last permit renewal:
  - a. An additional Rotoblast steel shot-blasting machine was installed in 2001. A fabric filter baghouse is installed integral to the Rotoblast for particulate control.
  - b. The sand reclamation was improved by adding two new separate sand reclamation systems:



- i. To reclaim sodium silicate bonded sand, the Group 9 system was installed with a rotary gas-fired dryer and a fluidized bed classifier. A fabric filter baghouse #17 was installed for final particulate control.
  - ii. To reclaim clay bonded greensand, a system was installed in the south end of the main foundry. The system includes a stack of three centrifugal scrubbers and a fluidized bed classifier. A new baghouse #20 serves this system.
- c. A larger 15,000 CFM cyclone dust collector #18 was installed to collect wood dust in the Pattern Shop, replacing an existing 3,900 CFM cyclone.
- d. Two gas-fired Heat Treat Ovens, #4 and #3, with heat inputs of 8 and 9 MMBTU/HR respectively, were upgraded with better combustion systems.
- e. Four induction furnaces for steel melting were installed in 1998 and 1999.

#### PROCESS AND CONTROL DEVICES

7. Existing air contaminant sources at the facility:

a. Metal Melting

Description	Max. Capacity	Control Equipment
#1 6MT Steel Electric Arc Furnace and #2 10TT Steel Electric Arc Furnace	2.5 ton/hr melt 6 ton/hr melt	#1. Pangborn Shaker Baghouse 58000 cfm
#3 10TT Manganese Electric Arc Furnace	6 ton/hr melt	#2. National Shaker Baghouse 30000 cfm
Two Steel Induction Furnaces Building #8	2.5 ton/hr melt each	
Two Manganese Induction Furnaces Building #9	2.5 ton/hr melt each	
One Pillar Induction Furnace Building 11	0.4 ton/hr melt each pot	





b. Sand Handling and Shakeout

Description	Max. Capacity	Control Equipment
Main Foundry Sand System	18.2 ton/hr sand	#5. Fuller Pulse Jet Baghouse 20000 cfm
Group 8 Sand System	8.75 ton/hr sand	#6. Wheelbrator Shaker Baghouse 27000 cfm
Core Room Sand System Core	0.53 ton/hr sand	#9. Fabric Filters NW Pulse Jet 5000 cfm
S. Foundry Sand System	18.2 ton/hr sand	#6. Fabric Filters NW reverse pulse 18000 cfm
Main Foundry Shakeout	37.2 ton/hr sand	#3. Fuller Pulse Baghouse 45000 cfm
Group 3/6 Shakeout	3.42 ton/hr sand	#10. Fabric Filters NW Shaker Baghouse 45000 cfm
National Sand Reclaimer	7 ton/hr sand	#4. Fuller Pulse Jet Baghouse 10000 cfm Note: Three centrifugal scrubbers and a fluidized bed classifier added to emission controls in 2000
Group 9 Sand Reclaim System	5 ton/hr sand	#17 LMC Baghouse, 20000 cfm
Main Foundry Greensand Reclaim System	1 ton/hr sand	#20 LMC Baghouse 4800 cfm

c. Casting Finishing

Description	Max. Capacity	Control Equipment
Joslyn Burn/Arc	1.1 ton/hr metal	#8. Wheelbrator Shaker Baghouse 15000 cfm
South Foundry Burn/Arc	4.5 ton/hr metal	#15. Wheelbrator Shaker Baghouse 55000 cfm
Joslyn RotoBlast	0.76 ton/hr metal	#7. Pangborn Shaker Baghouse 16000 cfm
Main Foundry Rotoblast	4.5 ton/hr metal	#14. Fabric Filters NW Pulse Jet 5250 cfm
Joslyn Tumbleblast	0.5 ton/hr metal	#16. US Air Filtration Pulse Jet 6500 cfm



Joslyn Spinblast	0.4 ton/hr castings	#19 shaker baghouse 5300 cfm
New Rotoblast Room installed 2001	7.6 ton/hr castings	#21 Wheelabrator baghouse 8000 cfm
Combined Foundry Burn/Weld	4.0 ton/hr castings	#11, #12, #13 - American Sheet Metal Baffle Chambers, D-23000 cfm, E-15300 cfm, and H-33000 cfm

d. Miscellaneous Processes

Description	Max. Capacity	Control Equipment
Heat Treat Ovens (14 misc.)	6 MMBTU/HR	Uncontrolled
Heat treat Oven #102	18 MMBTU/HR	Uncontrolled
Heat Treat Oven-Rebuilt	9 MMBTU/HR	Uncontrolled
Core Ovens (4)	0.2 MMBTU/HR	Uncontrolled
Ladle Heaters (8)	0.6 MMBTU/HR	Uncontrolled
Floor Pouring and Cooling	41,000 tons of metal per year	Uncontrolled
Pattern Shop Wood Dust Collector	0.4 patterns/hr	#18 RotoClone 15000 cfm
Casting Painting	4325 pounds of paint solvent/yr	Uncontrolled
Mold Wash	110,700 pounds of organic solvent/yr	Controlled by flaming molds with torch to burn off solvents

## COMPLIANCE

8. The facility was inspected on April 10, 1998, September 28, 1998, August 31, 1999 and August 16, 2000 and was found to be in compliance with permit conditions.
9. During the prior permit period there was one complaint recorded for this facility on July 11, 1997. Visible emissions were reported coming from the plant. A NON was written as detailed in Condition 10.
10. The following enforcement actions have been taken against this source since the last permit renewal: A Notice of Noncompliance, No. AQ-NWR-1997-078 was issued in



July, 1997 for excess visible emissions from the Wheelabrator baghouse. The filter bags were replaced and the emissions ceased. The compliance issue was considered corrected and the violation resolved.

## OPERATING AND MAINTENANCE CONDITIONS

11. A number of operating and maintenance requirements are carried over from previous permits with respect to the electric arc furnaces. These requirements are in place to minimize fugitive particulate emissions from the arc furnaces. The operating and maintenance requirements are listed below.
  - a. The permittee shall not conduct any oxygen lancing on the North 10TT electric arc furnace except when utilizing additional control equipment with prior written approval of the Department.
  - b. The permittee may oxygen lance only on the No. 1 South 6MT or No. 2 South 10TT electric arc furnaces at the rate of 22.4 cfm for a time not to exceed ten (10) minutes for each heat. This has been modified from the previous permit to reflect increased baghouse capacity.
  - c. The permittee shall not backcharge in any electric arc furnace.
  - d. The permittee shall, during tapping of either No. 1 or No. 2 South electric arc furnaces shut the melting power off on both furnaces and divert all collection capacity (58,000 cfm) to the furnace collection hood.

## PSEL HISTORY

12. Baseline 1978 annual emissions were estimated from actual production figures, and are shown below.

Baseline Year (1978) Emissions

PM	PM10	CO	VOC	NOx	SO2
<u>Tons</u>	<u>tons</u>	<u>tons</u>	<u>tons</u>	<u>tons</u>	<u>tons</u>
18.0	13.7	10.0	59.5	6.2	< 1





### HISTORY OF CHANGES TO THE PLANT SITE EMISSION LIMIT

13. The Plant Site Emission Limits established in the previous ACDP renewal/modifications are shown below. Plant site emissions limits changed with increased production and/or changes in emission factors.

a. May 12, 1980 ACDP

<u>Pollutant</u>	<u>Annual PSEL tons/yr</u>
Particulate matter	26.8

Annual production rate of 25,000 tons/yr metal and 1.5 million therms natural gas.

b. July 3, 1984 ACDP

<u>Pollutant</u>	<u>Annual PSEL tons/yr</u>
Particulate matter	62.17
Nitrogen oxide	16.80

The metal melt rate was 25,000 tons per year, and natural gas rate was 1,815,000 therms.

c. January 10, 1992 ACDP

<u>Pollutant</u>	<u>Annual PSEL tons/yr</u>
Particulate matter	11.9
Nitrogen oxide	15.8

The ACDP review report decreased the PSELs as a result of different emission factors. Metal melt was 35,000 tons per year, and natural gas was 1,600,000 therms.

d. June 19<sup>th</sup>, 1997 ACDP

<u>Pollutant</u>	<u>Annual PSEL tons/yr</u>
PM	38.6
PM <sub>10</sub>	28.6
VOC	74.9
NO <sub>x</sub>	17.0
CO	40.0
SO <sub>2</sub>	No PSEL <1

Emission Factors were added for fugitive particulate emissions and PM<sub>10</sub> emissions, and VOC from core wash and organic sand binder decomposition. Maximum production can be 39,475 tons of metal per year without exceeding the PM<sub>10</sub> SER.



e. Proposed 2002 Standard Permit

<u>Pollutant</u>	<u>Annual PSEL tons/yr</u>	<u>Netting Basis tons/yr</u>
PM	42	
NO <sub>x</sub>	39	
CO	99	
VOC	72	33

The PM limit was increased to the limit of the baseline plus SER, minus one ton for insignificant activities, so any further increases will require New Source Review. NO<sub>x</sub> and CO limits were increased to the generic limits. The VOC netting basis and VOC PSEL were changed due to a revision in the core wash emission factor.

## EMISSIONS

14. Proposed PSEL information is in the following table:

Pollutant	Baseline Emission Rate (tons/yr)	Netting Basis Changes		Plant Site Emission Limits (PSEL)		
		Previous (tons/yr)	Proposed (tons/yr)	Previous PSEL (tons/yr)	Proposed PSEL (tons/yr)	PSEL Increase (tons/yr)
PM	18	18	18	38.6	42	3.4
PM <sub>10</sub>	13.7	13.7	14	28.6	28	(0.6)
NO <sub>x</sub>	6.2	6.2	6	17	39	22
CO	10	10	10	40	99	59
VOC	59.5	59.5	33	74.9	72	(2.9)

The PM limit was increased to the limit of the SER (minus 1 ton for insignificant activities), to accommodate existing production capacity. The PM<sub>10</sub> limit was set previously at 14.9 tons over baseline, so it was reduced to 14 tons over baseline to conform with standard policy setting PSELs 1.0 tons less than the SER. NO<sub>x</sub> and CO limits were increased to the generic limits, to allow shift of production between arc furnaces and induction furnaces as needed to satisfy product demand changes. The VOC netting basis and VOC PSEL were changed due to a revision in the core and mold wash emission factor, where credit is given for flaming-off the cores and molds to combust isopropyl alcohol. The emission factor will be 50% of the alcohol applied. Also, the use of fractions of a ton is being discontinued for PSELs.



15. The PSEL consists of the following components:

Pollutant	PSEL	Assigned PSEL	Unassigned PSEL	Credits
	(tons/yr)		(tons/yr)	(tons/yr)
PM	42	42	0	0
PM <sub>10</sub>	28	28	0	0
NO <sub>x</sub>	39	39	0	0
CO	99	99	0	0
VOC	72	72	0	0

16. The emission limits are based on the estimated emissions at 45,000 tons per year production of steel castings. No significant changes in emissions were made at the plant during the previous permit period.

#### SIGNIFICANT EMISSION RATE ANALYSIS

17. An analysis of the proposed PSEL increases over the Netting Basis emissions rates is shown in the following table.

Pollutant	SER	Requested increase over previous netting basis	Increase due to utilizing capacity that existed in the baseline period	Increase due to physical changes or changes in the method of operation
PM	25	24	24	0
PM <sub>10</sub>	15	14	14	0
NO <sub>x</sub>	40	33	33	0
CO	100	89	89	0
VOC	40	39	39	0

#### NEW SOURCE REVIEW ANALYSIS

18. The PM and PM<sub>10</sub> Plant Site Emission Limits are at the highest values possible without triggering New Source Review. Columbia Steel has been actively reducing particulate emissions by installing hoods and ducts over areas that were uncontrolled, such as shakeout areas, and adding baghouses to treat the collected emissions. Additional work has been done to reduce core and mold wash usage, and several water-based washes have been evaluated. Although these actions have reduced actual emissions, there is still no room to expand the plant or greatly increase production with existing equipment without





exceeding the Significant Emission Rate for particulates and going through New Source Review. Considering the current business climate and the future of the industrial customers that Columbia Steel serves, it is unlikely that any expansion or increased production will be seen in the near future.

## **MAJOR SOURCE APPLICABILITY**

### CRITERIA POLLUTANTS

19. A major source is a facility that has the potential to emit more than 100 tons per year of any criteria pollutant. This facility is not a major source of criteria pollutant emissions.

### HAZARDOUS AIR POLLUTANTS

20. A major source is a facility that has the potential to emit more than 10 tons/year of any single HAP or 25 tons/year of combined HAPs. This source is not a major source of hazardous air pollutants. Only two pollutants have a potential to emit greater than 1 ton per year, manganese at 3.6 tons per year and benzene at 1.3 tons per year. The analysis is based on a more detailed review of HAPs done in the last permitting cycle. No significant changes have been made affecting HAP emissions, and the information is adequate given the magnitude of the emission rates relative to major/minor source levels. The HAP emissions are based on 45,000 tons/yr steel.

Hazardous Air Pollutant	Potential to Emit (tons/year)
benzene	1.31
manganese	3.60
Total HAPs	6.88

## **ADDITIONAL REQUIREMENTS**

### NESHAPS/MACT APPLICABILITY

21. There are no sources at this facility for which NESHAPS/MACT standards have been promulgated.

### NSPS APPLICABILITY

22. There are no sources at this facility for which NSPS standards have been promulgated.



## RACT APPLICABILITY

23. The facility is located in the Portland AQMA, but it is not one of the listed source categories in OAR 340-232-0010 and it does not have the potential to emit at levels that require a source-specific RACT, thus the RACT rules do not apply

## **SOURCE TESTING**

### PRIOR TESTING RESULTS

24. Nine source tests had been performed at the plant prior to 1997. The source tests performed are listed in the following table:

Process	Date	Test Method	Emission Rate
10TT Steel Electric Arc Furnace (I)	4/30/75	Oregon High Volume Method	0.0014 gr/dscf, 0.66 lb/hr
5 Cleaning Booths (G)	10/21/80	EPA Method 5 with backhalf	0.0000065 gr/dscf, 0.0029 lb/hr
2 Grinding Booths (H)	11/4/80	Oregon High Volume Method	0.002 gr/scf, 0.6 lb/hr
Main Foundry Sand System (M)	4/30/81	Oregon Method 5	0.006 gr/scf, 1.0 lb/hr
10TT Manganese Electric Arc Furnace (N)	4/30/82	Oregon Method 5	0.0065 gr/scf, 1.53 lbs/hr
Group 8 Sand System (P)	4/9/96	Oregon Method 5	0.002 gr/scf, 0.28 lb./hr
Foundry Roof Vents	4/96 and 5/96	Ambient Sampling with MiniVol Sampler	1.3 lb PM/ton metal 0.8 lb PM10/ton metal

### SOURCE TESTING IN NEXT PERMIT PERIOD

25. Due to the age of the furnaces and the dates of their source tests, Columbia Steel Casting will be required to source test their three arc furnaces during the next permit cycle. The source tests will measure emissions from the two baghouses serving the furnaces, so only two tests are required. In addition, the new induction furnace buildings will be tested to determine the fugitive emissions added to the overall plant site emissions. No baghouses are installed or are required on the furnaces themselves, but uncontrolled emissions from the pouring, casting and shakeout areas have been observed and need to be quantified.



The additional source testing was added after public complaints were received and testimony at the public hearing indicated there are concerns about emissions from the new induction furnace operations

## PUBLIC NOTICE

26. The proposed Plant Site Emission Limits are greater than the previous permit and are shown below. The Department placed the proposed renewal of the Columbia Steel Casting Air Contaminant Discharge Permit (ACDP) on Public Notice from February 8, 2002 through March 12, 2002.

Pollutant	Previous PSEL (tons/year)	Proposed PSEL (tons/year)	Increase
PM	38.6	42	3.4
NOx	17	39	22
CO	40	99	59

27. The Department received 15 requests to hold a public hearing on the proposed permit renewal. We mailed a Notice of Public Hearing to our mailing list of interested citizens on April 12, 2002, and the permit documents were available at DEQ Northwest Region office and at the Multnomah County Library, St. John's Branch. A public hearing was held on May 15, 2002 at the Roosevelt High School cafeteria located at 6941 North Central Avenue, Portland, Oregon. The hearing consisted of an informational session followed by a formal recorded hearing. During the informational discussion, the permittee presented information on Columbia Steel Casting's efforts to reduce and address air pollution concerns. Following the informational session, a formal hearing was held. People began testifying at 8:15 p.m. and finished around 8:45 p.m. Written comments were received until 5:00 PM on May 22, 2002. Based on the testimony, the source testing schedule was increased (see Condition 25. in the Review Report and Condition 4.1 in the Permit ), and changes in the recordkeeping and monitoring were made to reduce the paperwork burden (see Conditions 4.1 and 5.1 in the Permit).





## LIST OF COMMON ABBREVIATIONS USED IN AIR CONTAMINANT DISCHARGE PERMITS

A	annual	NSPS	New Source Performance Standard
ACDP	Air Contaminant Discharge Permit	NSR	New Source Review
ASTM	American Society for Testing and Materials	O <sub>2</sub>	oxygen
bbl	barrel (42 gal)	OAR	Oregon Administrative Rules
calendar year	The 12 month period beginning January 1 <sup>st</sup> and ending December 31 <sup>st</sup>	ORS	Oregon Revised Statutes
CFR	Code of Federal Regulations	O&M	operation and maintenance
CO	carbon monoxide	Pb	lead
date	mm/dd/yy	PCD	pollution control device
DEQ	Oregon Department of Environmental Quality	PM	particulate matter
dscf	dry standard cubic foot	PM <sub>10</sub>	particulate matter less than 10 microns in size
EPA	US Environmental Protection Agency	ppm	part per million
FCAA	Federal Clean Air Act	ppmv	part per million by volume
gal	gallon(s)	PSD	Prevention of Significant Deterioration
gr/dscf	grains per dry standard cubic foot	PSEL	Plant Site Emission Limit
HAP	Hazardous Air Pollutant as defined by OAR 340-244-0040	Q	quarterly
ID	identification number	R	required
I&M	inspection and maintenance	RACT	Reasonably Available Control Technology
lb	pound(s)	S	semi-annual
M	monthly	scf	standard cubic foot
MMBtu	million British thermal units	SERP	Source Emission Reduction Plan
N	not required	SIP	State Implementation Plan
NESHAP	National Emissions Standards for Hazardous Air Pollutants	SO <sub>2</sub>	sulfur dioxide
NOx	nitrogen oxides	VE	visible emissions
		VOC	volatile organic compound
		year	A period consisting of any 12 consecutive calendar months



PLANT SITE EMISSION DETAIL SHEET  
 Baseline - 1978

EMISSION POINT	OPERATING PARAMETERS	EMISSION FACTOR		EMISSIONS
		RATE	REFERENCE	tons/yr
Particulates – PM				
Metal Melting	17456 tons/ year of metal charged	0.31 lb/ton metal	Stack Test Mang. Furnace	2.7
Roof Fan & Misc	17456 tons/ year of metal charged	1.3 lb/ton metal	Indoor Ambient Sampling 1996	11.3
Shake- Out with baghouses	67,730 tons/year sand cast	.037 lb/ton sand	Collected dust at 99% efficiency	1.3
Sand Handling System	67,730 tons/year sand cast	.061 lb/ton sand	Collected dust at 99% efficiency	2.1
Grinding and Finishing	17456 tons/ year of metal charged	0.5 tons/year	Based on current 1.2 tons/yr and prod.ratio	0.5
Nat. Gas Combustion	71.81 million cu. ft. used in 1978	2.5 lb/MMcf	DEQ emission factor	0.1
Total				18.0 tons/yr PM



PLANT SITE EMISSION DETAIL SHEET  
 Baseline - 1978

<u>EMISSION POINT</u>	<u>OPERATING PARAMETERS</u>	<u>EMISSION FACTOR</u>		<u>EMISSIONS</u>
		<u>RATE</u>	<u>REFERENCE</u>	<u>tons/yr</u>
<b>Particulates less than 10 micron-PM10</b>				
Metal Melting	17456 tons/ year of metal charged	0.31 lb/ton metal	Stack Test Mang. Furnace	2.7
Roof Fan & Misc	17456 tons/ year of metal charged	0.8 lb/ton metal	Indoor Ambient Sampling 1996	7.0
Shake- Out with baghouses	67,730 tons/year sand cast	.037 lb/ton sand	Collected dust at 99% efficiency	1.3
Sand Handling System	67,730 tons/year sand cast	.061 lb/ton sand	Collected dust at 99% efficiency	2.1
Grinding and Finishing	17456 tons/ year of metal charged	0.5 tons/year	Based on current 1.2 tons/yr and prod.ratio	0.5
Nat. Gas Combustion	71.81 million cu. ft. used in 1978	2.5 lb/MMcf	DEQ emission factor	0.1
Total				13.7 tons/yr PM10



PLANT SITE EMISSION DETAIL SHEET  
 Baseline - 1978

<u>EMISSION POINT</u>	<u>OPERATING PARAMETERS</u>	<u>EMISSION FACTOR</u>		<u>EMISSIONS</u>
		<u>RATE</u>	<u>REFERENCE</u>	<u>tons/yr</u>
<b>Nitrogen Oxides - NOx</b>				
Metal Melting	17456 tons/ year of metal charged	0.32 lb/ton metal	AP-42 Table 7.10-3	2.8
Nat. Gas Combustion	71.81 million cu. ft. used in 1978	100 lb/MMcf	DEQ emission factor	3.4
				<hr/>
				Total 6.2 tons/yr NOx
<b>Carbon Monoxide – CO</b>				
Metal Melting	17456 tons/ year of metal charged	0.3 lb/ton metal	AP-42 Table 7.10-3	2.6
Binder Decomposition	17456 tons/ year of metal charged	0.76 lb/ton metal	Modern Casting SRI, Mfr. Data	6.6
Nat. Gas Combustion	71.81 million cu. ft. used in 1978	21 lb/MMcf	AP-42 Table 1.4-1	0.8
				<hr/>
				Total 10.0 tons/yr CO





PLANT SITE EMISSION DETAIL SHEET  
 Baseline - 1978

<u>EMISSION POINT</u>	<u>OPERATING PARAMETERS</u>	<u>EMISSION FACTOR</u>		<u>EMISSIONS</u>
		<u>RATE</u>	<u>REFERENCE</u>	<u>tons/yr</u>
Volatile Organic Compounds - VOC				
Metal Melting	17456 tons/ year metal charged	0.18 lb/ton metal	AP-42 Table 7.10-3	1.6
Pouring, Cooling & Shake-Out	17456 tons/year metal charged	0.217 lb/ton metal	Based on 95 binder use and MC/SRI EF	1.9
Mold & Core Wash* metal charged	17456 tons/ year metal charged	3.05 lb/ton metal*	Based on 95 VOC use and production ratio	26.6
Core Making metal charged	17456 tons/ year	0.22 lb/ton metal	Based on 95 VOC use and production ratio	1.9
Casting Painting	17456 tons/ year	0.091 lb/ton metal	Based on 95 paint use and production ratio	0.8
Nat. Gas Combustion	71.81 million cu. ft. used in 1978	2.78 lb/MMcf	AP-42 Table 1.4-1	0.1
* Netting basis changed – see review report.				
Total				32.9 tons/yr VOC



PLANT SITE EMISSION DETAIL SHEET  
 Estimated 2001-2006

Particulates – PM & PM<sub>10</sub>

Page One of Two

Emission Point	Operating Parameter	Emission Factors PM / PM <sub>10</sub>	EF Reference	PM tons/year	PM <sub>10</sub> tons/yr
Melting – 2 steel Arc Furnaces	12750 tons metal	0.22/0.22 lb/ton	Stack Test	1.40	1.40
Melting – Manganese Arc Furnace	25500 tons metal	0.31/0.31 lb/ton	Stack Test	3.95	3.95
Melting – 3 Induction Furnaces	6750 tons metal	0.10/0.09 lb/ton	AP 42 Table 12.13-2	0.34	0.30
Main Sand System	68000 tons sand	.038/.038 lb/ton	Stack Test	1.29	1.29
Group 8 Sand System	35000 tons sand	.002/.002 lb/ton	Baghouse Dust Study	0.35	0.35
Core Room Sand System	800 tons sand	.027/.027 lb/ton	Baghouse Dust Study	0.01	0.01
S. Foundry Sand System	68000 tons sand	0.01/0.01 lb/ton	Baghouse Dust Study	0.34	0.34
Main Foundry Shakeout	68000 tons sand	.037/.037 lb/ton	Baghouse Dust Study	1.26	1.26
Group 3/6 Shakeout	20500 tons sand	.038/.038 lb/ton	Baghouse Dust Study	0.39	0.39
National Sand Reclaimer	30000 tons sand	.061/.061 lb/ton	Baghouse Dust Study	0.92	0.92
Joslyn Burn Arc	5500 tons metal	.027/.027 lb/ton	Baghouse Dust Study	0.07	0.07



PLANT SITE EMISSION DETAIL SHEET  
 Estimated 2001-2006

Particulates less than 10 micron-PM10 Page Two of Two

Emission Point	Operating Parameter	Emission Factor	EF Reference	PM tons/year	PM10 tons/yr
S. Foundry Burn Arc	30000 tons metal	.001/.001 lb/ton	Stack Test	0.02	0.02
Joslyn Rotoblast	5000 tons metal	0.08/0.08 lb/ton	Baghouse Dust Study	0.20	0.20
Main Foundry Rotoblast	30000 tons metal	.014/.014 lb/ton	Baghouse Dust Study	0.21	0.21
Joslyn Tumblast	2000 tons metal	0.02/0.02 lb/ton	Baghouse Dust Study	0.20	0.20
Combined Burn/Weld	26400 tons metal	.014/.014 lb/ton	Stack Test	0.18	0.18
Joslyn Spinblast	1875 tons metal	0.14/0.14 lb/ton	Assume 99% control	0.13	0.13
Pattern Shop Rotoclone	1000 patterns	0.15/0.15 lb/p	Assume 99% control	0.08	0.08
Group 9 No-Bake Sand System	22200 tons sand	.029/.029 lb/ton	Assume 99% control	0.32	0.32
New Pattern Shop Rotoclone	1000 patterns	0.05/0.05 lb/p	Assume 99% control	0.03	0.03
Natural Gas Combustion	230 MMcf/yr	2.5/2.5 lb/MMcf	DEQ Emission Factors	0.29	0.29
Roof Vent Fugitives	45000 tons metal	1.30/0.80 lb/ton	Ambient Air Monitoring	29.25	18.00

Totals 41.23 tons/yr PM 29.94 tons/yr PM10





PLANT SITE EMISSION DETAIL SHEET  
 Estimated 2001-2006

**Nitrogen Oxides - NOx**

Emission Point	Operating Parameter	Emission Factor	EF Reference	NOx tons/yr
Steel Arc Furnaces (2)	12,750 tpy steel	0.32 lb/ton	Stack Tests	2.04
Manganese Arc Furnace	25,500 tpy steel	0.32 lb/ton	Stack Tests	4.08
Induction Furnaces	6,750 tpy steel	0	AP 42 Table 12.10-4	0
Natural Gas Combustion	230 MMcf/yr	100 lb/MMcf	DEQ	11.50

Total 17.62 tons/yr NOx

**Carbon Monoxide – CO**

Emission Point	Operating Parameter	Emission Factor	EF Reference	CO tons/yr
Steel Arc Furnaces (2)	12,750 tpy steel	2.77 lb/ton	Stack Tests	17.66
Manganese Arc Furnace	25,500 tpy steel	0.30 lb/ton	Stack Tests	3.82
Induction Furnaces	6,750 tpy steel	0 lb/ton	AP 42 Table 12.10-4	0
Pouring, Cooling & Shakeout	45,000 tpy steel	Mass balance	MSDS	16.27
Natural Gas Combustion	230 MMcf/yr	21 lb/MMcf	DEQ	2.42

Total 40.17 tons/yr CO



PLANT SITE EMISSION DETAIL SHEET  
 Estimated 2001-2006

**Volatile Organic Compounds - VOC**

Emission Point	Operating Parameter	Emission Factor	EF Reference	VOC tons/year
Steel Arc Furnaces	12,750 tpy steel	0.18 lb/ton	AP 42-Table 7.10-3	1.15
Manganese Arc Furnace	25,500 tpy steel	0.18 lb/ton	AP 42-Table 7.10-3	2.30
Induction Furnaces	6,750 tpy steel	0 lb/ton	AP 42 Table 12.10-4	0
Pouring, Cooling & Shakeout	45,000 tpy steel	Mass Balance	MSDS	4.43
Mold & Core Alcohol Wash	45,000 tpy steel	Mass Balance	DEQ, 50% destruction *	19.33
Mold & Core Making	45,000 tpy steel	Mass Balance	MSDS	5.08
Casting Painting	45,000 tpy steel	Mass Balance	MSDS	2.78
Pattern Painting	45,000 tpy steel	Mass Balance	MSDS	1.13
Natural Gas Combustion	230 MMcf/yr	2.78 lb/MMcf	DEQ	0.32

Total 36.52 tons/yr VOC

\*Moldcote 34 is flamed off the molds and a 50% destruction efficiency was agreed upon by DEQ in February, 2001.



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**State of Oregon**  
**Department of Environmental Quality**

**Date:** September 16, 2002

**Subject:** RESPONSE TO PUBLIC COMMENTS  
REGARDING THE RENEWAL OF AN  
AIR CONTAMINANT DISCHARGE PERMIT

**Source:** Columbia Steel Casting Company, Inc.  
Portland, Oregon

**Permit No.:** 26-1869

**Hearing:** May 15, 2002  
Portland, OR

This document contains the department's responses to verbal and written testimony received from the public on the proposed renewal of the air contaminant discharge permit (ACDP) for Columbia Steel Casting. This Response to Comments and the Hearing Officer's Report are included as attachments in the review report for the ACDP renewal. Copies of the Hearing transcript and comment letters are appended to this document.





## Background

Columbia Steel Casting (CSC) operates a steel foundry located at 10425 N. Bloss Avenue, Portland, Oregon. The process includes the casting and manufacture of medium and large casting for rock crushers and heavy equipment. The facility was built in 1962. The Columbia Steel Casting air permit was scheduled to expire on February 1, 2000. Until the renewal application is acted upon, Columbia Steel Casting is allowed to operate under the conditions of the expired permit.

The last permit contained plant site emission limits (PSELs) for particulate matter (PM), fine particulate matter that is ten microns in size ( $PM_{10}$ ), carbon monoxide (CO), nitrogen oxides ( $NO_x$ ) and volatile organic compounds (VOC). These values were: 38.6 tons per year (tpy) for PM, 28.6 tpy for  $PM_{10}$ , 17 tpy for  $NO_x$ , 40 tpy for CO and 74.9 tpy for VOC. The proposed permit establishes PSELs of 42 tpy for PM, 28 tpy for  $PM_{10}$ , 39 tpy for  $NO_x$ , 99 tpy for CO, and 72 tpy for VOC. The PM limit is being increased to the limit of the significant emission rate minus one ton for insignificant activities, to accommodate existing production capacity. The  $PM_{10}$  limit was reduced to 14 tpy over baseline to conform to standard procedures to establish the PSELs at one ton less than the significant emission rate and eliminate the use of fractions in PSELs.  $NO_x$  and CO limits are increased to generic limits to allow shift of production between arc furnaces and induction furnaces as needed to satisfy product demand changes. The Department adopted new rules that established generic PSELs that have been set at one ton less than the significant emission rate. Prior to this rule making, the Department established PSELs based on the permittee's anticipated actual emissions. While any increases above these levels required a permit modification, increases that stayed below the significant emission rate (SER) were deemed to have insignificant environmental impact and were granted without analysis. Generic PSELs are a work saving measure that eliminates permit modifications that do not require analysis yet provide the same environmental protection as before. The VOC PSEL is changed due to a revision to the core and mold wash emission factor.



## **Public Comment Period and Public Hearing**

The department placed the proposed renewal of the Columbia Steel Casting Air Contaminant Discharge Permit (ACDP) on Public Notice from February 8, 2002 through March 12, 2002. We received 15 requests to hold a public hearing on the proposed permit renewal. We mailed a Notice of Public Hearing to our mailing list of interested citizens on April 12, 2002, and the permit documents were available at DEQ Northwest Region office and at the Multnomah County Library, St. John's Branch. A public hearing was held on May 15, 2002 at the Roosevelt High School cafeteria located at 6941 North Central Avenue, Portland, Oregon. Gregg Dahmen and Greg Grunow represented the Department of Environmental Quality. The hearing consisted of an informational session followed by a formal recorded hearing. During the informational discussion, the permittee presented information on Columbia Steel Casting's efforts to reduce and address air pollution concerns. Following the informational session, a formal hearing was held. People began testifying at 8:15 p.m. and finished around 8:45 p.m. Written comments were received until 5:00 PM on May 22, 2002.

## **Public Testimony**

The department received seventeen written comments during the original public comment period ending March 12th, four verbal comments and three written comments during the public hearing held May 15<sup>th</sup>, and one additional written comment during the extended public comment period that ended May 22, 2002. The permittee also sent written comments on the details of the permit conditions in letters dated January 18, 2002 and March 11, 2002. A summary of comments is listed in the following tables. The hearings officer report and all written comments received are located in Appendix B of the review report for the permit renewal.



## Summary of Written and Verbal Comments

### WRITTEN COMMENTS BY MAIL

1<sup>st</sup> Public Notice Period: 2/8/2002 – 3/12/2002

No.	Date	Name	City and Zip Code	Comment Types
LTR1	2/19	Sue Brantley	Portland 97211	Requested hearing
LTR2	2/20	Mary Oslund	Portland 97202	Requested hearing
LTR3	2/20	Marv Welt	Portland 97217	Requested hearing
LTR4	2/21	Meryl Rudman	Portland 97203	Requested hearing
LTR5	2/21	Dale A. Svart	Portland 97203	Requested hearing
LTR6	2/22	Curtis Bryant	Portland 97203	Requested hearing
LTR7	2/27	Sophie Frost	Portland 97214	Requested hearing
LTR8	2/27	Jerry Rust	Portland 97217	Requested hearing
LTR9	3/1	Marina Hyacinth	Portland 97214	Requested hearing
LTR10	3/4	Troy Clark	Portland 97212	Requested hearing
LTR11	3/4	Larry Svart	Portland 97213	Requested hearing
LTR12	3/4	Ofelia Nunez Svart	Portland 97213	Requested hearing
LTR13	3/7	Mark Hamlin	Portland 97203	Requested hearing
LTR14	3/7	Ward E. Svart	Lake Oswego 97035	Requested hearing
LTR15	3/7	E. Viola Svart	Lake Oswego 97035	Requested hearing
LTR16	3/12	Mike Van Liew	Portland 97217	Requested hearing
LTR17	3/12	Bruce Schacht	Portland 97283	Permit conditions comments





## VERBAL TESTIMONY AT PUBLIC HEARING

Portland, Oregon, May 15, 2002

No.	Name	Affiliation	Comment Types
VT1	Troy Clark	President, Friends of Smith & Bybee Lakes	Particulate deposition on wildlife area. Effect of air pollutants on avians at Smith & Bybee Lakes
VT2	Dale Svart	Adjacent Property Owner to CSC	Avoidance of regulations, opacity violations, particulate deposition on cars, odor problems, environmental justice.
VT3	Larry Schick	Supplier to CSC	Clean operations, avoidance of toxics, dedication to running a clean process vs. low cost.
VT4	Bruce Schacht	Engineer for CSC	Do not want to be major source, choose least toxic materials, recycle, conserve energy, concerned w environmental issues throughout plant operations.

## WRITTEN STATEMENTS

Public Comments received at Hearing on May 15, 2002

No.	Name	City and Zip Code	Comment Types
WS 1	Marina Hyacinth	Portland 97214	Daily emissions of smoke, bad odor, difficulty breathing, don't allow increase.
WS 2	Lawrence E. Schick	Portland 97207	CSC uses low amounts of VOC and HAP, doesn't use phenolics and isocyanates, use bentonite.
WS 3	Dale E. Svart	Portland 97213	Don't increase PSEs, seems like major source, reduce emissions or legal actions.



## WRITTEN COMMENTS BY MAIL

Received during Notice Period April 12, 2002 to May 22, 2002

No.	Date	Name	City and Zip Code	Comment Types
LTR18	5/10	Robert Docktor	Portland 97217	CSC concerned with worker safety, good environmental practices.

## WRITTEN COMMENTS FROM PERMITTEE

No.	Date	Name	Comment Types
LTR19	1/18	Bruce Schacht	Plant equipment clarifications, permit inconsistencies.
LTR20	3/11	Bruce Schacht	Source testing requirement, emission factors and compliance determination method, units used, conditionally exempt CEG.

Much of the public testimony that the department received focuses on common concerns and perceptions. Where multiple persons provided similar testimony, the Department grouped or summarized the comments together to allow a single response. Generally, comments are organized according to the following subjects:

- A. Comments that Columbia Steel Casting emissions may be harming the wildlife in the area.
- B. Comments from nearby residents that the dust, smoke and odors impact their health, their quality of life and their ability to go outdoors.
- C. Comments suggesting that the permit should not be issued with the increased limits.
- D. Comments that the department should require Columbia Steel Casting to do more to reduce their emissions.
- E. Comments that Columbia Steel Casting is regularly exceeding limits in their current permit
- F. Comments from Columbia Steel Casting on desired permit changes.
- G. Comments praising Columbia Steel for their clean operations and use of less hazardous materials





## COMMENTS AND RESPONSES

### **A. Comments that Columbia Steel Casting emissions may be harming the wildlife in the area.**

Citizens expressed concerns about increasing allowable particulate matter emissions. They voiced concern that particulate matter is being deposited into Smith and Bybee Lakes and that we do not know the impacts of this deposition upon wildlife.

**Comment 1:** All of this work that we have been doing to improve the wildlife habitat is for the wildlife and the one thing that has been left out in terms of the contribution of an increase allowing Columbia Steel Casting to increase its particulate matter. In some respects it is almost three-fold in terms of the tons of particulate matter is the deposition of that particular matter on the Smith and Bybee Lakes wildlife area. (Troy Clark, VT1)

**Comment 2:** This is another one of these situations where these rules allowing for the discharge of matter into the air and its deposition then on Smith and Bybee Lakes, we don't really know particularly the ramifications of the impacts on bird-life at Smith and Bybee until they begin to die ...so I am urging that DEQ really consider whether or not allowing this amount of increase of pollutants going into the area that are falling out on the Smith and Bybee Lakes are really the way to go because we don't know how to evaluate it from a wildlife point of view. (Troy Clark, VT1)

**Department Response:** Columbia Steel has asked for an increase in particulate matter up to the significant emission rate minus one, the regulatory limit that does not require air quality impact analysis. According to our regulations, the Department must grant these requests. The significant emission rate is the level below which our regulations assume no air quality impact. The Department does not know what impact deposition from Columbia Steel or other pollution sources have on wildlife and aquatic life in Smith and Bybee Lakes without undertaking a significant monitoring and evaluation program that would require significant resources. If the lakes are ever declared water quality limited for metals or other substances which could be emitted by Columbia Steel then the Department will evaluate all possible sources of pollutants, including Columbia Steel and work with those sources to reduce their pollution.





In addition, the Department is adopting air toxics regulations that establish authority and processes to regulate toxic air pollutants. Under this new program, the Department will work with an advisory committee to develop a comprehensive geographic plan to regulate and reduce toxic air pollutants in the Portland metropolitan area. It is possible that this effort may include evaluating environmental impacts as well as human health impacts.

Until new programs are in place or we have evidence of significant impact from Columbia Steel, the Department must follow current regulations and grant Columbia Steel's request

**B. Comments from nearby residents that the dust, smoke and odors impact their health and their quality of life and their ability to go outdoors.**

Several residents are concerned about dust and smoky emissions and odors from Columbia Steel's operations.

**Comment 3:** For five and a half years I witnessed daily emissions of brown to dark gray smoke pouring from the stacks on top of CSCC.

Most days that was happening (and the wind was blowing in the direction of my House) I didn't go outside because it was difficult for me to breathe and the air smelled very bad. (Marina Hyacinth, WS1)

**Comment 4:** Odor control is also an issue that needs to be addressed. The smell that accompanies the emissions from CSCC is noxious and nauseating. Durametal Corporation is required to deal with the odors from its facility because the neighborhood insists upon it. Even though St. Johns is not the upscale neighborhood that Tualatin is, we should be treated with the same quality of respect. If the odor exists because of the particulates, then...the technology exists to remove all of the particulates from your stacks. (Dale Svart, VT2)





**Department Response:** Columbia Steel's air contaminant discharge permit requires that they meet opacity limits of no more than 20% opacity and that they not have odors or cause nuisance conditions. To date, the Department has received few complaints about Columbia's steels particulate emissions or odor emissions. During inspections, Department staff has not observed opacity exceeding 20%. Columbia Steel is allowed to emit smoke that is below 20% opacity. Opacity is defined as how much the background is obscured by smoke. Twenty percent opacity allows the background to be obscured up to 20%. The Department asks that when neighbors observe smoke or odors coming from Columbia Steel that they report their complaints to the Department and to Columbia Steel. Columbia Steel is required by their permit to respond to complaints to identify the problem and correct it and to keep a log of how they responded. The Department will also respond to complaints by finding out what is happening at Columbia Steel to cause the complaint or by referring complaints to Columbia Steel to address.

**C: Comments suggesting that the permit should not be issued with the increased limits.**

The increases in the Plant Site Emission Limits (PSEL) were questioned since increased pollution is not acceptable to the neighbors.

**Comment 5:** All I know by tripling some of the discharges—what we're doing we're just allowing that much more material to end in Smith and Bybee Lakes. And so, I urge DEQ to look at the ramifications of the wildlife area of allowing this discharging and I agree with others that this seems to be the wrong direction to allow more and more of the allowances of discharge. (Troy Clark, VT1)

**Comment 6:** Why would DEQ allow Columbia Steel to increase the level of particulates they release into the environment? (Marina Hyacinth)

**Comment 7:** It makes no practical airshed sense for DEQ to increase all industrial air contaminant discharge permits to their individual maximum allowable ceilings. If it's being done to lighten the paperwork burden on DEQ the public interests are not being served by increasing the contaminant load on our airshed. Also, if we are now 600 tons below our non-compliance annual load, wouldn't it be nice if we could be 1,000 tons below? Or 6,000 tons below? (Dale Svart, WS3)



**Department response:** In its permit renewal application Columbia Steel Casting did request lower levels of emission increases for its assigned plant site emission limits (PSELs) than what was granted by DEQ in its proposed permit. The larger than requested PSELs in Columbia Steel Casting's permit are the result of a rulemaking action by the DEQ that became effective May 4, 2001. This rulemaking action was for the purpose of "streamlining" the permitting process to reduce or eliminate DEQ's need to perform unnecessary permit modifications, otherwise triggered under the old rules. The rulemaking created a "Generic PSEL" for assignment to minor sources of air pollution. The Generic PSEL is defined as: 24 tons/yr of PM; 14 tons/yr of PM<sub>10</sub>; 39 tons/yr of SO<sub>2</sub>, NO<sub>x</sub> and VOC; and 99 tons/yr of CO. These limits are assigned to a permitted facility to prevent it from becoming subject to further analysis and new source review requirements. The purpose of PSELs in DEQ permits is to create regulatory limits or trigger levels above which additional regulatory requirements apply such as new source review or additional permitting requirements such as the Title V operating permit program. Including the Generic PSEL in permits does not create or allow additional emissions to the airshed that would not otherwise be allowed. The Portland Metropolitan airshed used to be classified as a Non-attainment Area for ozone (VOCs and NO<sub>x</sub> are precursors of ozone) and CO, which means the area routinely exceeded the federal ambient air quality standards for these pollutants. DEQ's Air Quality program has improved the Portland Metropolitan airshed and it now meets the federal ambient air quality standards. DEQ is now required to have a 10-year maintenance plan that is approved by EPA, to ensure that the area remains in attainment with these standards. The Generic PSEL program was reviewed and approved by DEQ and EPA and determined to meet the air quality needs/requirements of the maintenance plan.





Limiting air quality emissions by the PSELs is not the sole method of protecting air quality. Air purity/emission control is regulated by DEQ by separate rules for control requirement. These rules are source or process specific. PM/PM<sub>10</sub> emission sources at Columbia Steel Casting are subject to grain loading rules and opacity limits that minimize particulate emissions. There presently is not a categorically specific rule applicable to cast iron and steel foundries, so Columbia Steel Casting is subject to DEQ's Typically Achievable Control Technology (TACT) requirement. Process emissions at Columbia Steel Casting are exhausted to emission control devices (baghouses, filters, scrubbers) for capture, destruction or neutralization which meets the TACT requirement. These control devices must be operated and maintained to continually meet their designed control efficiencies. If the Department or EPA determines that additional control requirements are needed at facilities like Columbia Steel, we or EPA would need to develop specific rules to require additional controls. EPA has identified steel foundries as a source category that EPA intends to write control technology rules for as part of the federal Urban Area Source Control Program.

Columbia Steel Casting's PSELs (not emissions "levels") have been increased to the generic PSEL levels for NO<sub>x</sub> and CO. Although DEQ has permitted Columbia Steel Casting (as well as other minor sources) with Generic PSELs that are higher than what was requested by the company, emissions are not expected to exceed what was applied for by the company. The company can only emit pollutants at levels allowed by its operational design. In this instance, Columbia Steel Castings' operational design includes the industry standard emission control devices mentioned above. Emissions at a facility may come from the manufacturing process and/or from operations that support that process.

**D: Comments that the department should require Columbia Steel Casting to do more to reduce their emissions.**

**Comment 8:** Avoidance—better than compliance? What about being a good neighbor? What about doing what you can to keep up with cleaner energy, efficient technology? In order to do your part, keep





toxic and ozone levels down in this 21<sup>st</sup> Century, when pollution and global warming are massive problems. (Dale Svart, VT2)

**Comment 9:** From my personal observations, I believe CSCC is in non-compliance on a regular and probably daily basis. Should they be rewarded with an increase in their contaminants? No, they should go back to their 1978 levels at least. I have a 1978 vehicle that must pass DEQ's Clean Air Standards every two years. I'm not allowed to get dirtier every time my vehicle ages. I have to meet the standards for my car when it was new, so I must pay to keep it in good running condition. On a level playing field, CSCC should do the same. (Dale Svart, VT2)

**Comment 10:** So, there are creative ways to be in better than permit compliance. I expect to see at least primary treatment of all of the waste coming out of the open stacks on your two main buildings. Those stacks should all be capped and going into the latest technology baghouses. That smoke should not be going into the atmosphere untreated. It's the 21<sup>st</sup> Century. We should all be doing our part to exist in harmony on this planet with its limited air shed. (Dale Svart, VT2)

**Comment 11:** If CSCC is a minor pollution source, I would hate to live adjacent to a major source. How many hundreds of tons of contaminants does it take to be major? ...I would like to state for the record that CSCC MUST reduce their particulate emissions considerably, or I will be forced to take legal action to ensure that my right to breathe clean air, as well as my civil rights are not violated. Dale Svart, WS3

**Department Response:** The Department always encourages additional reduction in air emissions with all of the companies that we regulate. The permit identifies all of the requirements that Columbia Steel Casting must meet to ensure that the company complies with the department's laws and regulations. The Department and Columbia Steel Casting have agreed to additional permit conditions designed to address these concerns and reduce emissions below the minimums required. In Condition 3.1, Columbia Steel Casting has agreed to follow work practices that reduce emissions, yet these practices are not required by specific regulations.





**E: Comment that Columbia Steel Casting is regularly exceeding limits in their current permit.**

**Comment 12:** There are times when the smoke is dense enough to obscure the background. The plant, under their existing permit, is allowed three minutes of opacity per hour. I have literally on dozens if not hundreds of occasions seen this exceeded often for ten to fifteen minutes per hour and in the last two months have on at least four occasions seen brown smoke for over one hour at a time. (Dale Svart, VT2)

**Department Response:** Air Quality Inspectors will be inspecting Columbia Steel Casting periodically, and will be reviewing annual reports that Columbia Steel Casting submits. Air Quality staff will also follow up on citizen complaints that come to the Department directly. The Department must document that a plant is exceeding permit limits, is endangering human health and safety, or causing actual harm. To date, the Department does not have such evidence about Columbia Steel Casting's operations or emissions.

The proposed permit required two source tests to determine that the arc furnaces are in compliance with permit conditions. In response to public concerns about visible emissions, the Department has decided to require testing of the induction furnace operations, to establish emission factors and emission levels. The Department always has the ability to modify a permit when new information becomes available. If the Department determines that additional permit requirements are needed to address particulate, odors or toxics, we will modify or reopen the permit.

**F. Comments from Columbia Steel Casting on the permit conditions, review report and detail sheets in the draft permit.**

**Comments :** Please see the attached letters dated January 18, 2002 and March 11, 2002.

**Department Responses to 1/8/2002 Letter:** The requested corrections to the numbers, locations and types of equipment have been incorporated into the Review Report (Items 6 & 7).



The Department relies on past permits and the current application for renewal to provide a complete picture of the operation. The names, equipment numbers, and foundry nomenclature used by Columbia Steel Casting will be used in the permit for clarity. Regarding the apparent conflict in Condition 1.1 in the permit, the rules are different for boilers than for other equipment and will be clarified. These are minor changes to the Review Report that do not affect emission levels.

**Department Responses to 3/12/2002 Letter:** 4.1 Source testing is normally required every five years at a plant this size. The existing test data is out of date and does not reflect the current compliance capabilities of the equipment. Therefore testing will be required. 4.3 The previous calculations for compliance with permit limits were not as precise as the proposed calculation method. While we recognize that new spreadsheets may have to be developed, all sources are now using the updated compliance calculation method and it will be easier in subsequent years. 6.2 The pattern shop dust emissions are hard to quantify, so the Department will work with Columbia Steel Casting to better quantify them. The quantity of emissions is very small, so the precision of measurement is of lesser importance in respect to overall emissions. For VOC, it is our intent to track individual emissions for mold wash, coatings and other VOC sources. Aggregated emission factors are not desirable when dealing with large, significant quantities.

#### **G. Comments praising Columbia Steel for their clean operations and use of less hazardous materials**

**Comment 13:** Columbia Steel converted almost exclusively to the use of water-based coatings and avoided large volumes of organic compounds and hazardous air pollutants. Columbia Steel refuses to use chemical binders to bond sand and molds together and uses water-based materials almost exclusively to bond its sand together. Columbia Steel is committed to making the effort and the sacrifice required in using these products and processes which would be protective of the environment and provide us safe working environment also for its employees. Larry Schick, VT3 and WS2





**Comment 14:** We are designated a natural minor source.... We intend doing whatever it takes to never violate that status, to never become a major source. For air pollution control, we start with 23 major dust collectors – all of them are inspected on a weekly schedule and promptly repaired any time a problem is detected. We maintain a stock of all of the common replacement parts for them on site at all times and are on a continuous program of improvement studying our individual sources of air pollutants and taking steps to reduce them. In recent years, we have spent hundreds of thousands of dollars for air and water reduction projects that are strictly voluntary and not required by EPA or DEQ or any of our permits.... For every one of steel we melt, we recycle about four tons of molding sand. ....We are continually researching, adapting and inventing technology to improve our recycling abilities. We take environmental management seriously.....Bruce Schacht, VT4

**Department response:** Comments noted.

**Conclusion:** The comments received on this permit renewal are concerned with a perceived increase in emissions from this plant. The use of the new “generic” PSELs is causing this concern. Comments were not received on other permit conditions. Comments from concerned individuals indicate that Columbia Steel Casting may have occasional excursions of the opacity requirements in their permit. The Department will verify future complaints, and take action as necessary. This will be done as part of the inspection program.

The permit addresses all applicable regulations for steel foundries. Therefore the Department intends to proceed with issuing the permit renewal as amended in response to public comment and comments from the permittee. The Department is also amending the source test requirements originally proposed, in order to further the investigation into visible emissions reported to the Department’s complaint office.

